

Amendments to the Claims

This listing of claims replaces all prior versions and listings of claims in the application.

Listing of Claims

1-4. (Canceled)

5. (Currently Amended) A liquid crystal display device comprising pixels, each of said pixels comprising:

a source signal line;

$n \times m$  ( $n$  is a natural number equal to or greater than 2,  $m$  is a natural number) memory circuits;

$n$  gate signal lines;

$n$  TFTs having gate electrodes wherein each of the  $n$  TFTs is [[are]] connected to the source signal line and a corresponding one of said  $n \times m$  memory circuits; and

a D/A converter for converting  $n$  bit digital signals stored in said  $n \times m$  memory circuits into analog signals,

wherein said memory circuits store digital signals corresponding to  $m$  frames, and

wherein each of said gate electrodes is connected to a corresponding one of said  $n$  gate signal lines.

6-7. (Canceled)

8. (Currently Amended) A liquid crystal display device comprising pixels, each of said pixels comprising:

a liquid crystal element;

a source signal line;

$n$  ( $n$  is a natural number equal to or greater than 2) gate signal lines;

$n$  TFTs having gate electrodes;

$n \times m$  ( $m$  is a natural number) memory circuits; and

a D/A converter,

wherein each of said gate electrodes is connected to a corresponding one of said n gate signal lines,

wherein each of said n TFTs is connected to said source signal line and an input terminal of a corresponding one of said n x m memory circuits,

wherein an output terminal of each of said n x m memory circuits is connected to an input terminal of said D/A converter, and

wherein an output terminal of said D/A converter is connected to said liquid crystal element.

9. (Canceled)

10. (Previously Presented) A liquid crystal display device according to claim 8,

wherein said liquid crystal display device has a source signal line driving circuit including shift registers, first latch circuits, second latch circuits, and switches,

wherein said first latch circuits hold n bit digital signals upon receiving sampling pulses from said shift registers until said n bit digital signals are transferred to said second latch circuits, and

wherein said switches select said n bit digital signals that have been transferred to said second latch circuits one bit at a time to input said selected signals into said source signal line.

11. (Original) A liquid crystal display device according to claim 8,

wherein said liquid crystal display device has a source signal line driving circuit including shift registers, first latch circuits, and second latch circuits, and

wherein said first latch circuits hold 1 bit digital signals upon receiving sampling pulses from said shift registers until said 1 bit digital signals are transferred to said second latch circuits.

12-32. (Canceled)

33. (Previously Presented) A liquid crystal display device according to claim 5, wherein said memory circuits and said D/A converter are arranged so as to overlap the source signal line.

34-46. (Canceled)

47. (Previously Presented) A liquid crystal display device according to claim 5, wherein said memory circuits are formed over one selected from the group consisting of a glass substrate, a plastic substrate, a stainless steel substrate, and a single crystal wafer.

48. (Previously Presented) A liquid crystal display device according to claim 8, wherein said memory circuits are formed over one selected from the group consisting of a glass substrate, a plastic substrate, a stainless steel substrate, and a single crystal wafer.

49-52. (Canceled)

53. (Previously Presented) A liquid crystal display device according to claim 5, wherein said liquid crystal display device is incorporated in one selected from the group consisting of a mobile telephone, a video camera, a mobile computer, a head mount display, a television set, a portable electronic book, a personal computer, and a digital camera.

54. (Previously Presented) A liquid crystal display device according to claim 8, wherein said liquid crystal display device is incorporated in one selected from the group consisting of a mobile telephone, a video camera, a mobile computer, a head mount display, a television set, a portable electronic book, a personal computer, and a digital camera.

55-69. (Canceled)

70. (Currently Amended) A liquid crystal display device comprising pixels, each of said pixels comprising:

- a source signal line;
- a liquid crystal element;

$n \times m$  ( $n$  is a natural number equal to or greater than 2,  $m$  is a natural number) memory circuits;

$n$  gate signal lines;

$n$  TFTs having gate electrodes wherein each of the  $n$  TFTs is [[are]] connected to the source signal line and a corresponding one of said  $n \times m$  memory circuits; and

a D/A converter for converting  $n$  bit digital signals stored in said  $n \times m$  memory circuits into analog signals,

wherein said memory circuits store digital signals corresponding to  $m$  frames, and

wherein each of said gate electrodes is connected to a corresponding one of said  $n$  gate signal lines.

71. (Previously Presented) A liquid crystal display device according to claim 70, wherein said memory circuits and said D/A converter are arranged so as to overlap the source signal line.

72-73. (Canceled)

74. (Previously Presented) A liquid crystal display device according to claim 70, wherein said memory circuits are formed over one selected from the group consisting of a glass substrate, a plastic substrate, a stainless steel substrate, and a single crystal wafer.

75. (Previously Presented) A liquid crystal display device according to claim 70, wherein said liquid crystal display device is incorporated in one selected from the group consisting of a mobile telephone, a video camera, a mobile computer, a head mount display, a television set, a portable electronic book, a personal computer, and a digital camera.

76-81. (Canceled)

82. (New) A liquid crystal display device according to claim 8, wherein said memory circuits and said D/A converter are arranged so as to overlap the source signal line.

83. (New) A display device comprising:

a plurality of pixels, each of the plurality of pixels comprising:

a source signal line;

a first memory circuit and a second memory circuit;

a first gate signal line and a second gate signal line;

a first thin film transistor and a second thin film transistor; and

a D/A converter connected to the first memory circuit and the second memory

circuit,

wherein the first thin film transistor is connected to the source signal line and the first memory circuit,

wherein the second thin film transistor is connected to the source signal line and the second memory circuit, and

wherein a gate electrode of the first thin film transistor is connected to the first gate signal line and a gate electrode of the second thin film transistor is connected to the second gate signal line.

84. (New) The display device according to claim 83, wherein the first memory circuit, the second memory circuit and the D/A converter are arranged so as to overlap the source signal line.

85. (New) The display device according to claim 83, wherein the first memory circuit and the second memory circuit are formed over one selected from the group consisting of a glass substrate, a plastic substrate, a stainless steel substrate, and a single crystal wafer.

86. (New) The display device according to claim 83, wherein the display device is incorporated in one selected from the group consisting of a mobile telephone, a video camera, a mobile computer, a head mount display, a television set, a portable electronic book, a personal computer, and a digital camera.

87. (New) The display device according to claim 83, wherein a first digital signal is written to the first memory circuit in a first period by turning the first thin film transistor conductive, and a second digital signal is written to the second memory circuit in a second period by turning the second thin film transistor conductive.